

**Christopher S. Meiklejohn**  
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**PROFILE** Functional programmer, distributed systems researcher, conference speaker, and open source contributor.

**INTERESTS** *Conflict-Free Replicated Data Types (CRDTs)*  
Applications of CRDTs in distributed systems, specifically partitioned and replicated computation in large-scale systems.

*Distributed Computing*  
Efficient distributed computation in mobile and desktop applications supporting of-line operation that preserve the correctness properties of applications.

*Education*  
Instruction of distributed systems topics.

**PUBLICATIONS** Meiklejohn, C. (2014)  
*Augmented Inverted Indexes to Track Causality in Eventually Consistent Data Stores*  
to appear at Middleware '14 Poster Session  
December 8-12 2014; Bordeaux, FR

Meiklejohn, C. (2014)  
*Eventual Consistency and Deterministic Dataflow Programming*  
*A Case Study of Integrating Derflow with the Riak Data Store.*  
LADIS '14: 8th Workshop on Large-Scale Distributed Systems and Middleware  
October 23-24, 2014; Cambridge, UK

Bravo, M., Li, Z., Van Roy, P., and Meiklejohn, C. (2014)  
*Derflow: distributed deterministic dataflow programming for erlang*  
In Proceedings of the Thirteenth ACM SIGPLAN workshop on Erlang (Erlang '14)  
Collocated with ICFP '14; September 5, 2014; Goteborg, Sweden

Brown, R., Cribbs, S., Meiklejohn, C., Elliott, S. (2014)  
*Riak DT map: a composable, convergent replicated dictionary.*  
In Proceedings of the First Workshop on Principles and Practice of Eventual Consistency (PaPEC '14)  
Collocated with EuroSys '14; April 13, 2014; Amsterdam, NL

Meiklejohn, C. (2014)  
*On the composability of the Riak DT map:*  
*Expanding from embedded to multi-key structures.*  
In Proceedings of the First Workshop on Principles and Practice of Eventual Consistency (PaPEC '14)  
Collocated with EuroSys '14; April 13, 2014; Amsterdam, NL

Meiklejohn, C., (2013)  
*Riak PG: Distributed Process Groups on Dynamo-style Distributed Storage*  
In Proceedings of the twelfth ACM SIGPLAN workshop on Erlang (Erlang '13)  
Collocated with ICFP '13; September 28, 2013; Boston, MA

## EDUCATION

*Graduate Coursework*, 2013  
Brown University, Providence, RI  
One semester of coursework completed in distributed database development and formal verification.

*Bachelor of Science*, Information Technology, 2006 - 2009  
Northeastern University, Boston, MA,  
G.P.A. 3.75/4.0, Summa Cum Laude, Sigma Epsilon Rho Honor Society Member

*Associate of Science*, Computer Science, 2001 - 2006  
Community College of Rhode Island, Warwick, RI

## TALKS

*Building Applications with Distributed Erlang*  
NDC London 2014; London, United Kingdom

*Eventually Consistent Computations*  
ReactConf 2014; San Francisco, NV

*Eventually Consistent Computation with CRDTs*  
RICON 2014; Las Vegas, NV

*SyncFree: Large-Scale Computation Without Synchronization*  
RICON 2014; Las Vegas, NV

*Eventual Consistency and Deterministic Dataflow Programming*  
LADIS Workshop '14; Cambridge, UK

*"A Note On Distributed Computing" (1994)*  
Papers We Love 2014; Boston, MA

*Derflow: Distributed Deterministic Dataflow Programming*  
ACM SIGPLAN Erlang Workshop 2014; Gothenburg, Sweden

*Distributed deterministic dataflow programming for Erlang*  
Erlang User Conference 2014; Stockholm, Sweden

*Convergent / Divergent*  
EmberConf 2014; Portland, OR

*On The Composability of the Riak DT Map:  
Expanding From Embedded To Multi-Key Structures*  
PaPEC 2014; Amsterdam, NL

*Verified Vector Clocks: An Unexpected Journey*  
Erlang Factory 2014, San Francisco; San Francisco, CA

*Verified Vector Clocks*  
RICON West 2013; San Francisco, CA

*Riak PG: Distributed Process Groups on Dynamo-style Distributed Storage*  
ACM SIGPLAN Erlang Workshop 2013; Boston, MA

*Choose Your Own Consistency*  
Toronto Erlang Factory Lite 2013; Toronto, ON

*Bloom: A Language For Disorderly Distributed Computing*  
Wicked Good Ruby 2013; Boston, MA

*What Even Is An Erlang?*  
Wicked Good Ruby 2013 Lightning Talk; Boston, MA

*Functional Web Apps with Webmachine*  
LambdaJam 2013; Chicago, IL

*Implementing a Distributed Process Registry on Riak Core*  
New York Erlang Factory Lite 2013; New York, NY

*From Ruby to Erlang: An Unexpected Journey*  
Chicago Erlang Factory Lite 2013; Chicago, IL

*An Introduction to Functional Reactive Programming*  
NodePDX 2013; Portland, OR

*Distributed Data Structures in Coq*  
RICON East 2013; New York, NY

*Building Ambitious Web Applications with Ember.JS*  
FITC 2012; Waltham, MA

## AWARDS

*Academic Excellence Award, Northeastern University, 2009*  
Awarded to students with the highest grade point average in their field of study.

*BRASS Award, Berklee College of Music, 2008*  
Awarded to outstanding employees during the fiscal year.

*Zero Hero Award, Conversent Communication, 2006*  
Awarded to employees for zero customer loss.

## EXPERIENCE

*Senior Software Engineer* March 2012 - Present  
Basho Technologies, Inc., Cambridge, MA

- Responsible for research on CRDTs under our partnership with SyncFree.
- Worked on Basho's replicated data center product, optimizing performance and reliability of multi-datacenter replication.
- Responsible for building out an application to manage usage of a half-petabyte object store using Ruby, JavaScript and D3.
- Developed closed-source web utilities for managing access to product trials.
- Implemented open-source client libraries for Riak CS in Ruby and Erlang.

*Contributor and Maintainer* July 2011 - Present  
Rubygems.org (Community-hosted Ruby packages)

- Assisted in maintenance and development of the rubygems.org platform.

- Software Engineer* November 2010 - March 2012  
Swipely, Inc., Providence, RI
- Responsible for developing the Swipely platform, which is written in Rails 3 using RDS, MongoDB and Riak.
  - Created a dynamic newsfeed based on purchasing history of customers, that prioritized scheduling based on purchase history and frequency.
  - Introduced team to pair programming, test and behavior driven development.
  - Contributed patches to Rails core, and various open source libraries.
  - Took the lead on migrating our infrastructure from Rails 2.3.4 to Rails 3.0+.
- Volunteer Systems Administrator* May 2010 - March 2012  
Devio.us (Free OpenBSD Shell Provider)
- Assisted in all operational upgrades of Devio.us systems and user management.
- Lead Software Developer* February 2010 - July 2010  
Tapchamp, LLC.
- Developed Rails-based fantasy play prediction system, which included Facebook integration and mobile API for iPhone application.
  - Deployed and managed all servers responsible for platform.
- South End Community Health Center, Boston, MA 2010
- Working with a designer to build English and Spanish versions of their website.
- Coevolution Interactive, Boston, MA 2009 - 2010
- Provided e-commerce and web development work for various clients.
- Crunchy Granola Baby, LLC., Salem, MA 2008 - 2009
- Designed and implemented e-commerce solution for their online store.
- Web Programmer and Systems Administrator* August 2008 - February 2009  
Artists House Music, New Orleans, LA
- Designed and implemented custom solutions to support marketing initiatives.
  - Provided systems support to staff, as well as general systems administration services.
- Software Engineering Manager and Systems Engineer* April 2008 - October 2010  
Berklee College of Music, Boston, MA
- Managed software development for the Berklee Media business division.
  - Responsible for ensuring 24/7 uptime of all systems, rapid response to critical issues and delivering custom software products.
  - Worked with the CTO and the Software Engineering Managers from other divisions to ensure applications are being developed following the proper standards.
  - Configured and maintained hardware at two data center facilities as well as provisioned a disaster recovery site.
- Software Developer and Systems Engineer* July 2006 - April 2008  
Berklee College of Music, Boston, MA
- Developed for, and supported, custom AOLServer/OpenACS installations.
  - Designed and supported web solutions using PHP, TCL, XML/XPATH, and Smarty.
  - Provided 24/7 support for web services.

*Senior Systems Engineer*

January 2005 - July 2006

Conversent Communications, Lincoln, RI

- Designed and implemented high availability solutions for e-mail and web systems.
- Implemented a multi-server LDAP infrastructure.
- Worked in their data center to provide installation and support for customers.
- Designed and deployed an auto-provisioning system to integrate with their OSS.
- Designed database-driven systems for tracking data center customers and billing burstable bandwidth customers.

*Systems Engineer*

January 2000 - January 2005

Conversent Communications, Warwick, RI

- Worked in a small team to develop, maintain and deploy low-cost solutions for data products.
- Deployed Linux, Solaris, Windows and FreeBSD based systems.
- Designed database-driven web-based solutions for customer management in Perl, Java, and PHP.

*Technical Support/Customer Service*

August 1998 - June 2000

IDS World Network, East Greenwich, RI

- Provided technical support and customer service via telephone, e-mail and news-group for customers.

**COMMUNITY**

*Program Committees*

Participated in program committees.

- Member of the ACM DEBS 2015 Industry PC.
- Member of the ACM EuroSys 2014 shadow PC.

*Events*

Assisted in the organization of several commercially and community supported events.

- Organized DowncityJS, a hackathon in Providence, RI.
- Assisted in organizing the RICON conference for the past three years.

*User Groups*

Organizer of user groups for several development communities.

- Functional Programmers; Providence, RI
- Ember.JS; Boston, MA

*Think Distributed*

Creator and host of the Think Distributed podcast, focusing on making distributed systems understandable.

- Hosted episodes featuring various researchers and practitioners.
- Held live panel discussions at Strange Loop 2013 and RICON 2013/2014.

*SyncFree Consortium*

Contributing member and industry partner of the SyncFree research project on large-scale synchronization-free computation funded by the European Union under the Seventh Framework Programme.

- Worked with Universite catholique de Louvain on building a programming model for working with eventual consistency.
- Assisted in the development and testing of the projects reference platform.
- Built out testing infrastructure for the reference platform for repeatable executions of test code and use case simulation.